UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF AGRICULTURAL ENGINEERING

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MONTHLY NEWS LETTER

WASHINGTON, D. C., JANUARY 20, 1931.

ATTENTION IS CALLED TO THE UNDESIRABLE PRACTICE OF TYPEWRITING LEGENDS ON THE BACKS OF PHOTOGRAPHS. SUCH PICTURES ARE UNSUITABLE FOR MAKING HALF-TONES FOR BULLETINS BECAUSE THEY ARE NEARLY ALWAYS PUNCTURED BY PERIODS AND COMMAS. MOREOVER, LEGENDS SHOULD NOT BE CLIPPED TO PHOTOS BECAUSE THE IMPRESSION OF THE CLIP IS LEFT ON THEM. LEGENDS SHOULD BE WRITTEN ON THE BACKS WITH PEN OR INDELIBLE PENCIL, OR TYPED ON A SLIP ONE END OF WHICH SHOULD BE PASTED TO THE BACK OF THE PICTURE. LEGENDS SHOULD IN ALL CASES POINT OUT THE PARTICULAR FEATURE OR FEATURES FOR WHICH THE PICTURE WAS TAKEN, AND SHOULD SHOW THE LOCATION, THE DATE, AND THE NAME OF THE PHOTOGRAPHER.

THE AGRICULTURAL APPROPRIATION BILL FOR THE FISCAL YEAR 1932 HAS BEEN REPORTED TO THE SENATE, HAVING ALREADY PASSED THE HOUSE. NO CHANGE SO FAR HAS BEEN MADE IN THE BILL, IN THE ITEMS RELATING TO AGRICULTURAL ENGINEERING.

S. P. LYLE WILL MAKE A TRIP SHORTLY TO GEORGIA, ALABAMA, AND MISSISSIPPI AND WHILE SOUTH WILL ATTEND THE MEETING OF THE SOUTHERN EXTENSION WORKERS AND THE SOUTHERN SECTION OF THE A.S.A.E. WHICH MEETS IN CONJUNCTION WITH THE SOUTHERN AGRICULTURAL WORKERS ASSOCIATION AT ATLANTA, FEBRUARY 4 - 6. LATER MR. LYLE WILL ATTEND THE CONFERENCE OF STRUCTURES MEN IN THE CORN BELT WHICH WILL MEET AT AMES, IOWA, IN ORDER TO PERFECT AN ARRANGEMENT PROVIDING FOR INTERCHANGE OF BUILDING PLANS BETWEEN STATE AGRICULTURAL ENGINEERING WORKERS.

L. A. JONES WILL ATTEND THE ANNUAL FARM AND HOME MAKERS' WEEK OF THE MINNESOTA COLLEGE OF AGRICULTURE AT ST. PAUL, MINN. WHERE HE WILL DELIVER FOUR ADDRESSES RELATING TO THE DIFFERENT PHASES OF AGRICULTURAL ENGINEERING.

N. A. KESSLER WILL ALSO ATTEND THE ABOVE MEETING. HE PARTICIPATED IN A SIMILAR MEETING CALLED BY THE EXTENSION DEPARTMENT OF THE MICHIGAN STATE COLLEGE AT MARQUETTE, IN THE EARLY PART OF THIS MONTH.

W. V. HUKILL ON JANUARY 5 PROCEEDED TO WASHINGTON STATE, PRELIMINARY TO MAKING A SERIES OF TRIPS WITH FRUIT SHIPMENTS ACROSS THE NORTHERN STATES TO EASTERN POINTS. MR. HUKILL'S PRESENT WORK RELATES TO THE MAINTAINING OF PROPER TEMPERATURES FOR FRUIT SHIPMENTS DURING EXTREMELY COLD WEATHER.

E. M. MERVINE IS CONTINUING HIS WORK PRELIMINARY TO MAKING A COMPREHENSIVE STUDY OF MACHINERY FOR GROWING AND HARVESTING SUGAR BEETS. AFTER WORKING FOR SEVERAL WEEKS IN CALIFORNIA HE WILL PROCEED TO COLORADO WHERE HEADQUARTERS FOR THIS PROJECT WILL BE ESTABLISHED AT FORT COLLINS.

G. A. MITCHELL IS IN WASHINGTON FOR A CONFERENCE WITH MR. MCCRORY ON THE PROGRESS OF HIS WORK AND PLANS FOR FUTURE WORK. MR. MITCHELL IS ENGAGED AT THE PRESENT TIME IN THE EXPERIMENTAL SOLUTION OF THE PROBLEMS INVOLVED IN USING SEWAGE FROM INSTITUTIONS FOR IRRIGATION. THIS WORK IS BEING DONE IN COOPERATION WITH THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION.

G. A. CUMINGS HAS GONE TO FLORIDA TO INITIATE WORK ON A PROJECT IN COOPERATION WITH THE SOUTH AND SOUTHEASTERN STATES DEALING WITH THE PROBLEM OF MECHANICAL DISTRIBUTION OF FERTILIZERS. IT IS EXPECTED THAT THIS PROJECT WILL EXTEND OVER A NUMBER OF YEARS, DURING WHICH THE VARIOUS MECHANICAL AND AGRONOMIC PHASES OF THE PROBLEM OF DISTRIBUTING FERTILIZERS BY MACHINERY WILL BE STUDIED EXPERIMENTALLY.

W. M. HURST IS WORKING UP RESULTS OF THE RICE DRYING EXPERIMENTS WHICH HE CONDUCTED LAST FALL IN ARKANSAS AND TEXAS.

M. C. BETTS, IN COOPERATION WITH THE FOREST SERVICE, HAS PREPARED A MANUSCRIPT FOR A LEAFLET ON THE SUBJECT "BRACING FARM BUILDINGS."

W. W. MCLAUGHLIN PRESIDED AT THE JOINT MEETING OF THE LAND RECLAMATION DIVISION AND THE PACIFIC COAST SECTION OF THE A.S.A.E. HELD AT THE HOTEL WHITCOMB, SAN FRANCISCO, JANUARY 7. THE ATTENDANCE WAS FAIRLY LARGE AND VERY REPRESENTATIVE. SUBJECTS OF THE DAY WERE: RELATION OF FOREST COVER TO EROSION AND RUN-OFF PROBLEMS; RESEARCH WORK IN EROSION; THE INFLUENCE OF IRRIGATION FARMING UPON AGRICULTURAL MACHINERY REQUIREMENTS; THE BOULDER CANYON PROJECT; AND FINANCIAL PROBLEMS OF RECLAMATION.

O.V.P. STOUT AND LLOYD N. BROWN COMPLETED THE SEASON'S EXPERIMENTS IN THE USE OF WATER IN THE PEAT AREAS OF THE SACRAMENTO-SAN JOAQUIN DELTA. SUGAR BEETS GROWN WITH THE WATER TABLE HELD AT APPROXIMATELY 1.5, 2.0 AND 3.0 FEET BELOW THE SOIL SURFACE FAILED TO REVEAL ANY MARKED DIFFERENCE EITHER IN THE YIELD PER ACRE OR SUGAR PERCENTAGE. TULES AND CAT-TAILS GROWN IN TANKS SHOWED A VERY MUCH HIGHER USE OF WATER THAN CULTIVATED CROPS. FLOODING SMALL AREAS AS A MEANS OF ALKALI RECLAMATION SHOWS SOME PROMISE WHEREAS FLOODING LARGE AREAS DOES NOT PERMIT OF SO FREE A DRAINAGE AND IS NOT SO SUCCESSFUL. ASPARAGUS GROWN IN TANKS WITH WATER HELD AT 2, 3, AND 4 FEET BELOW THE GROUND SURFACE, DOES NOT SHOW ANY MARKED DIFFERENCE IN

YIELDS ALTHOUGH THE 4-FOOT LEVEL APPEARS TO HAVE A SLIGHT ADVANTAGE AT THIS EARLY STAGE OF THE EXPERIMENT.

SERVICE WORK FOR THE BIOLOGICAL SURVEY ON THE BEAR RIVER MIGRATORY BIRD REFUGE IN UTAH PROGRESSED QUITE SATISFACTORILY DURING THE PAST YEAR UNDER THE DIRECTION OF L. M. WINSOR AS RESIDENT CONSTRUCTION ENGINEER. ALL OF THE MAJOR RIVER AND OVERFLOW STRUCTURES HAVE BEEN COMPLETED. SEVERAL THOUSAND ACRES WERE INUNDATED DURING THE PAST FALL AND PROVIDED EXCELLENT FEEDING GROUNDS FOR WATER FOWL. UP TO THE PRESENT TIME THERE HAS BEEN EXPERIENCED IN THIS LOCALITY THE LONGEST AND MOST SEVERE PERIOD OF COLD WEATHER SINCE THE ESTABLISHMENT OF THE WEATHER BUREAU STATION 57 YEARS AGO. ONE CONTRACTING OUTFIT, HOWEVER, HAS BEEN WORKING ALMOST CONTINUOUSLY IN BUILDING DIKES.

L. T. JESSUP MADE A TRIP TO BONNERS FERRY, IDAHO, DECEMBER 7 TO 18, IN CONNECTION WITH THE KOOTENAI RIVER INVESTIGATION. A CONSIDERABLE PART OF THE TIME ON THIS TRIP WAS SPENT IN COMPLETING SOME SOIL EXPERIMENTS STARTED LAST FALL, IN WHICH 25 SOIL COLUMNS, 4 INCHES IN DIAMETER, VARYING IN LENGTH FROM 1 TO 3 FEET, WERE TAKEN IN PLACE. THEY WERE SATURATED AND PERMITTED TO DRAIN, RECORDS BEING KEPT OF RATE AND AMOUNT OF OUTFLOW. SOME OF THE COLUMNS HAD CEASED TO FLOW SOME MONTHS AGO; OTHERS WERE STILL FLOWING IN DECEMBER BUT AT A VERY SLOW RATE. ON ALL OF THESE AFTER DISCHARGE HAD CEASED, OR PRACTICALLY CEASED, SAMPLES WERE TAKEN AT 6-INCH INTERVALS AND TESTED FOR MOISTURE CONTENT. IN ADDITION, ON A MAJORITY THE ENTIRE SOIL COLUMN WAS WEIGHED IN SECTIONS FOR THE PURPOSE OF CHECKING ON APPARENT SPECIFIC GRAVITY AND POROSITY WHICH HAD PREVIOUSLY BEEN DETERMINED AT VARIOUS LOCALITIES BY OTHER METHODS. THE MATERIAL VARIED FROM CLAY TO SAND, MUCK AND PEAT. ONE OF THE GREAT DIFFICULTIES WAS OBTAINING COMPLETE SATURATION PARTICULARLY IN THE LONGER COLUMNS. ON THIS TRIP MR. JESSUP INSPECTED MOST OF THE DISTRICTS OF THE AREA AND MEASURED SOME WELLS.

R. L. PARSHALL MADE A SHORT TRIP TO THE ARKANSAS VALLEY DURING THE FIRST WEEK OF THE MONTH, AT WHICH TIME TWO DOUBLE-HEAD RECORDING AND INDICATING INSTRUMENTS WERE SET ON SEPARATE CANALS. MR. PARSHALL MADE A CHECK MEASUREMENT OF THE DISCHARGE THROUGH THE 15-FOOT PARSHALL MEASURING FLUME ON ONE OF THESE CANALS, WHERE THE AGREEMENT BETWEEN THE CURRENT METER GAGING AND THE COMPUTED DISCHARGE WAS ABOUT 1 1/2 PER CENT. ONE OF HIS RECENTLY DESIGNED VORTEX SAND TRAPS IS TO BE INSTALLED IN A CANAL OF THAT SECTION IN COMBINATION WITH THE RIFFLE DEFLECTORS.

M. R. LEWIS AND EARL FOGARTY OF THE OREGON AGRICULTURAL EXPERIMENT STATION ARE PREPARING A REPORT ON THE IRRIGATION OF STATE SENATOR SAM H. BROWN'S FARM. THIS FARM IS IRRIGATED BY MEANS OF A DEEP WELL AND PUMP INSTALLED EARLY LAST SPRING UNDER THE DIRECTION OF MR. LEWIS. THE SYSTEM WAS FINANCED FROM A SMALL REVOLVING FUND PROVIDED BY A GROUP INTERESTED IN THE AGRICULTURAL DEVELOPMENT OF THE WILLAMETTE VALLEY, FOR EXPENDITURE BY THE EXPERIMENT STATION. DURING THE PAST SEASON APPROXIMATELY 50 ACRES OF BERRIES AND TRUCK CROPS WERE IRRIGATED BY THE FURROW METHOD. THE WELL AND PUMP WILL FURNISH WATER FOR THREE OR FOUR TIMES THIS AREA AND IT IS HOPED WILL BE USED TO FULL CAPACITY WITHIN TWO OR THREE YEARS.

M. R. LEWIS PREPARED SPECIFICATIONS FOR A DEEP WELL TURBINE AND BOOSTER PUMP TO BE USED FOR BOTH DOMESTIC WATER SUPPLY AND FOR IRRIGATION FOR THE SALEM INDIAN SCHOOL, CHEMAWA, OREGON. THESE WERE PREPARED AT THE REQUEST OF THE INDIAN SERVICE OF THE DEPARTMENT OF THE INTERIOR.

A COOPERATIVE AGREEMENT HAS BEEN SIGNED BY THE DIRECTOR OF THE ARIZONA AGRICULTURAL EXPERIMENT STATION UNDER WHICH IT IS INTENDED TO CONDUCT COOPERATIVE IRRIGATION INVESTIGATIONS IN THAT STATE.

C. E. RAMSER HAS SUBMITTED THE FOLLOWING ITEMS REGARDING THE SOIL EROSION WORK:

H. S. RIESBOL REPORTS THAT 57 ACRES OF LAND WERE TERRACED WITH A CATERPILLAR TRACTOR FIFTEEN AND GRADER ON THE SIMPSON FARM NEAR GUTHRIE, OKLA. THE AVERAGE WIDTH AND HEIGHT OF THE TERRACES WERE ABOUT 25 FEET AND 15 INCHES, RESPECTIVELY. CONSIDERING ONLY ACTUAL LABOR AND OPERATING COSTS, THE AVERAGE COST PER ACRE WAS $.90. THIS COST WAS INCREASED TO $2. PER ACRE BY INCLUDING A RENTAL CHARGE OF $10 PER DAY FOR THE TRACTOR AND $3. PER DAY FOR THE GRADER. LONG TERRACES AND IDEAL CONDITIONS OF SOIL WERE PARTLY RESPONSIBLE FOR THE LOW COST OF CONSTRUCTION. THE FOREGOING COST INCLUDE NO SCRAPER WORK TO BUILD UP THE TERRACES ACROSS GULLIES.

R. R. DRAKE REPORTS THE COMPLETE INSTALLATION OF RUN-OFF AND SILT MEASURING DEVICES ON NINE GRADED TERRACES AND ON TWO PLOTS ON THE HAYS FARM.

R.W. BAIRD REPORTS THAT ABOUT 1 MILE OF TERRACES WERE CONSTRUCTED ON THE TYLER FARM DURING THE PAST FOUR WEEKS. THE GROUND WAS TOO WET MOST OF THE TIME FOR SATISFACTORY TERRACING WORK. ARRANGEMENTS HAVE BEEN MADE FOR A LOAN OF A CATERPILLAR TRACTOR FIFTEEN AND GRADER FOR USE ON THE TYLER FARM AND THE TERRACING PROGRAM WILL BE PUSHED VIGOROUSLY IN ORDER TO COMPLETE IT BEFORE THE BEGINNING OF THE PLANTING SEASON.

R. A. NORTON REPORTS THAT THE INSTALLATION OF DIVISOR BOXES AND SILT STORAGE TANKS BELOW EACH OF THE NINE 1-FOOT MEASURING FLUMES ON THE TEMPLE PROJECT WAS COMPLETED ABOUT THE MIDDLE OF JANUARY. FLAT PLOWING OF ABOUT 110 ACRES OF LAND WHICH IS TO BE PLANTED TO ROW CROPS DURING THE 1931 SEASON WAS COMPLETED ON DECEMBER 31.

C. E. RAMSER VISITED O. A. FARIS, ASSOCIATE IRRIGATION ENGINEER AT AUSTIN, TEXAS ON DECEMBER 20 AND OBTAINED INFORMATION ON METHODS OF DETERMINING THE SILT CONTENT OF SILT SAMPLES WITH A VIEW TO EMPLOYING SIMILAR METHODS ON THE SOIL EROSION EXPERIMENTAL FARMS.

E. E. STEWART LEFT GUTHRIE, OKLA. ON JANUARY 8 FOR TEMPLE, TEXAS WHERE HE WILL BE ENGAGED ON THE SURVEY AND PREPARATION OF A MAP OF SUBSTATION NO. 5 OF THE TEXAS AGRICULTURAL EXPERIMENT STATION. AFTER COMPLETING THIS WORK HE WILL GO TO SPUR, TEXAS, AND MAKE A SIMILAR SURVEY AND MAP OF THE SUBSTATION AT SPUR.

R. B. GRAY AND R. M. MERRILL SPENT JANUARY 7 AT BELLEVUE, OHIO, CONFERRING WITH OFFICIALS OF THE OHIO CULTIVATOR COMPANY ON MACHINERY RELATING TO CORN BORER CONTROL.

MR. GRAY LEFT JANUARY 14 FOR A TRIP THROUGH SEVERAL OF THE MIDDLE WESTERN STATES TO CONFER WITH EXPERIMENT STATION OFFICIALS AND FARM MACHINERY MANUFACTURERS' REPRESENTATIVES ON CORN BORER CONTROL AND OTHER MACHINERY.

WALLACE ASHBY AND A. H. GLAVES HAVE COMPLETED THE ROUGH DRAFT ON MANUSCRIPT FOR A BULLETIN ON PLOWING.

FRANK IRONS SPENT A DAY CONFERRING WITH THE CASE COMPANY REPRESENTATIVES AT COLDWATER RELATIVE TO CORN BORER CONTROL MACHINERY.

THE FOLLOWING ARE RECENT ADDITIONS TO OUR AGRICULTURAL ENGINEERING LIBRARY:

BAKER, D. M. AND CONKLING, HAROLD
WATER SUPPLY AND UTILIZATION. NEW YORK, JOHN WILEY AND SONS, INC., 1930. 495 P.
"AN OUTLINE OF HYDROLOGY FROM THE VIEWPOINT OF THE ARID SECTION OF THE U.S. TOGETHER WITH AN OUTLINE OF WATER LAW AND ITS ADMINISTRATION AS IT HAS DEVELOPED IN THE ARID STATES."

BENNETT, M.K.
FARM COSTS STUDIES IN THE UNITED STATES; THEIR DEVELOPMENT APPLICATIONS, AND LIMITATIONS. STANFORD UNIVERSITY, CALIFORNIA, FOOD RESEARCH INSTITUTE, 1928. 289 P.
"BROADLY STATED, THE PURPOSE OF THE PRESENT STUDY IS TO DESCRIBE AND EVALUATE THE WORK WHICH HAS BEEN DONE AND IS BEING DONE IN THE U.S. IN THE COLLECTION AND ANALYSIS OF STATISTICS OF FARM COSTS OF PRODUCTION."

BROWN, C. A. C.
ELECTRICITY IN AGRICULTURE. OXFORD, CLARENDON PRESS, 1929. 74 P. (INSTITUTE FOR RESEARCH IN AGRICULTURAL ENGINEERING. UNIVERSITY OF OXFORD. BULLETIN NO. 5)
PART 1. INVESTIGATION INTO THE PRESENT POSITION AND EXTENT OF USE OF ELECTRICITY ON FARMS.
PART 2. GENERAL CONSIDERATION OF THE PRESENT POSSIBILITIES OF RURAL ELECTRIFICATION.

EARLE, F. S.
SUGAR CANE AND ITS CULTURE. NEW YORK, JOHN WILEY AND SONS, INC. 1928. 355 P.
A FAIRLY COMPREHENSIVE VIEW OF THE SUGAR-CANE SITUATION IN ALL PARTS OF THE WORLD, WRITTEN FROM A PRACTICAL RATHER THAN A RESEARCH STANDPOINT. DISCUSSES PROPAGATION, VARIETIES, DISEASES, PESTS, AND CULTIVATION, INCLUDING CLIMATE, SOIL AND METHODS OF PLANTING.

ETCHEVERRY, BERNARD A.
LAND DRAINAGE AND FLOOD PROTECTION. 1ST EDITION. NEW YORK, MCGRAW-HILL BOOK COMPANY, INC., 1931. 327 P.
"THIS WORK DEALS WITH THE SURFACE DRAINAGE AND UNDERDRAINAGE OF AGRICULTURAL LANDS, AFFECTED BY EXCESSIVE WATER DUE TO PRECIPITATION OR IRRIGATION; THE PROTECTION OF LANDS AGAINST FLOOD AND TIDE WATER; AND THE METHODS OF SPREADING ASSESSMENTS FOR THE APPORTIONMENT OF THE COST OF THE SEVERAL CLASSES OF IMPROVEMENTS TO THE AREAS BENEFITED."